



Spectral Gamma-Ray Borehole  
Log Data Report

Page 1 of 2

Borehole

41-00-08

Log Event A

### Borehole Information

|                         |                                 |                                 |
|-------------------------|---------------------------------|---------------------------------|
| Farm : <u>SX</u>        | Tank : <u>SX</u>                | Site Number : <u>299-W23-65</u> |
| N-Coord : <u>35,297</u> | W-Coord : <u>75,923</u>         | TOC Elevation : <u>663.46</u>   |
| Water Level, ft :       | Date Drilled : <u>3/14/1956</u> |                                 |

### Casing Record

|                            |                                |                    |
|----------------------------|--------------------------------|--------------------|
| Type : <u>Steel-welded</u> | Thickness : <u>0.313</u>       | ID, in. : <u>8</u> |
| Top Depth, ft. : <u>0</u>  | Bottom Depth, ft. : <u>125</u> |                    |

### Equipment Information

|                                   |   |                                    |
|-----------------------------------|---|------------------------------------|
| Logging System : <u>2</u>         | Detector Type : <u>HPGe</u>               | Detector Efficiency: <u>35.0 %</u> |
| Calibration Date : <u>03/1995</u> | Calibration Reference : <u>GJPO-HAN-1</u> |                                    |

### Logging Information

|                                 |                                 |                                    |
|---------------------------------|---------------------------------|------------------------------------|
| Log Run Number : <u>1</u>       | Log Run Date : <u>7/13/1995</u> | Logging Engineer: <u>Bob Spatz</u> |
| Start Depth, ft.: <u>85.0</u>   | Counting Time, sec.: <u>100</u> | L/R : <u>L</u> Shield : <u>N</u>   |
| Finish Depth, ft. : <u>62.0</u> | MSA Interval, ft. : <u>0.5</u>  | Log Speed, ft/min.: <u>n/a</u>     |

Borehole

**41-00-08**

Log Event A

---

**Analysis Information**

---

Analyst : P.D. HenwoodData Processing Reference : Data Analysis Manual Ver. 1Analysis Date : 10/25/1995**Analysis Notes :**

The entire length of this borehole was not completely logged. On the basis of the borehole having a good historical record of logging data and the belief the borehole was likely to have been double-cased, it was decided to log only the zone of elevated gamma readings from about 62 to 85 ft.

The pre- and post-survey field verification spectra showed consistent activities, indicating the logging system operated properly during data collection. Energy calibrations differed because of gain drift in the instrumentation. Gain drifts during data collection necessitated energy versus channel number recalibrations during processing of the data to maintain proper peak identification. Because only 23 ft of the borehole was logged, there were no depth overlaps.

The casing thickness was 1/4 (0.25) inches, for which a correction factor was applied. No other corrections, such as for fluid, were made to the log data.

Additional information and interpretations of log data are included in the main body of the Tank Summary Data Report for tank SX-109.

**Log Plot Notes:**

Three log plots are provided. The Cs-137 concentrations are provided in a separate log plot to document the relative concentrations and shape of the distribution. A plot of naturally occurring radionuclides (K-40, U-238, and Th-232) is also provided, which can be used for lithology interpretation. A combination plot includes logs of Cs-137, natural gamma, total gamma derived from the spectral data, and the latest available data from the WHC Tank Farms gross gamma logging. The energy peaks from which the radionuclide concentrations were derived are included in the headings for the Cs-137 and natural gamma plots.

A log scale was selected for the Cs-137 logs. The natural gamma, total gamma, and gross gamma logs are plotted on a linear scale.

The statistical uncertainty in a measurement is represented by uncertainty bars on the log plots where appropriate. This uncertainty is reported at the 95-percent confidence interval. The minimum detectable activity (MDA) is represented as an open circle on the plots. The MDA of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible. If the reported concentration is slightly above the MDA, the 95-percent confidence interval may extend below the MDA value and detection is not assured with 95-percent certainty.

The Tank Farms gross gamma plot is the latest available from WHC. It is useful because it provides a historical record for the entire borehole. With the exception of scale changes, no attempt has been made to adjust for depth discrepancies or other potential problems.